

CLAIMS

1. A valve arrangement (10) with at least two inlets (20, 21), adapted each for a medium (A, B), and at least one outlet (22), through which a chosen mixture of the said media can pass, the said inlets (20, 21) being furthermore adapted to interact each via a section (20a, 21a) of channel with associated openings (12c, 12b) in a valve seating (12) while the said outlet (22) is adapted to interact via a section (22a) of channel with an associated opening (22) in a valve gate (11), whereby a first means (30) is available in order to control at least the motion of the valve gate (11) relative to the valve seating (12) or vice versa in such a manner that at least one chosen mixing ratio and/or one chosen rate of flow can be regulated, **characterised** in that a glide surface and/or an interface (11a, 12a) between the valve seating (12) and the valve gate (11) is chosen to be plane, or at least essentially plane, that a further means (40) is available in order to control the motion of the valve gate (11) relative to the valve seating (12) or vice versa in such a manner that the said two means (30, 40) in order to control the motion of the valve gate (11) and/or the motion of the valve seating (12) or vice versa, are formed such that they comprise two distinct devices (31, 41) each controlling one motion.

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2. The valve arrangement according to claim 1, **characterised** in that a first device (31) is adapted for a first direction of motion and a second device (41) is adapted for a second direction of motion, and that the first direction of motion is adapted to exclusively, or at least to a dominant degree, regulate the mixing ratio between the media, while the second direction of motion is adapted to exclusively, or at least to a dominant degree, regulate the rate of flow of the mixture passing through the outlet.

3. The valve arrangement according to claim 1 or 2, **characterised** in that the first device (31), which controls the motion of the valve gate, is adapted to endow via a rotational motion a translation or displacement motion oriented parallel to the interface (11a) to the valve gate (11).

4. The valve arrangement according to claim 1, 2 or 3, **characterised in that** the second device (41), which controls the motion of the valve seating, is adapted to endow via a rotational motion a translation or displacement motion oriented parallel to the interface (12a) to the valve seating (12), where the
- 5 direction of motion of the latter and/or its speed of displacement is chosen to be different from the direction of motion and/or the speed of displacement offered by the first device.
- 10 5. The valve arrangement according to claim 3 or 4, **characterised in that** the directions of motion are chosen to be straight and distinct from each other, preferably at an angle of approximately 90°.
- 15 6. The valve arrangement according to claim 1, used as a multiseated mixing valve for the mixing of a number of compressible media in a lung ventilator unit, in particular a lung ventilator unit in association with an intravenous treatment, assigned to anaesthesia, **characterised in that** the said media are supplied to the said inlets at the same pressure, or at essentially the same pressure, whereby a regulation of the rate of flow, via the further means (40) and its associated device (41) can be carried out without influencing the
- 20 mixing ratio, or a regulation of the mixing ration, via the said means (30) and its associated device (31), can be carried out without influencing the rate of flow.
- 25 7. The valve arrangement according to claim 1, 2, 4 or 6, **characterised in** that the gear ratio between the chosen rotational motion/displacement motion is adapted to correspond to: one revolution = 0.5 - 2.0 mm, for example 0.6 - 1.2 mm.
- 30 8. The valve arrangement according to claim 1 or 6, **characterised in that** the openings formed in the valve seating are arranged side-by-side and at a distance from each other that corresponds to a chosen length of the opening in the valve gate.

9. The valve arrangement according to claim 8, **characterised** in that the openings in the valve seating are chosen to be right-angled in the interface, with a width that corresponds to the total displacement motion for the chosen limiting values of the chosen mixing ratio and with a length that corresponds to

5 the total displacement motion for the chosen limiting values for the chosen regulation of rate of flow.

10. The valve arrangement according to claim 8 **characterised** in that the openings in the valve seating are, within the interface, chosen with a narrowing or with a widening width within the said distance related to length.

15. The valve arrangement according to claim 8, **characterised** in that the opening in the valve gate is, within the interface and at least within the openings in the valve seating, chosen with a narrowing or with a widening width.

20. The valve arrangement according to claim 1 or 6, **characterised** in that the valve gate is pressed against the valve seating with the aid of a spring unit.

25. The valve arrangement according to claim 1, 2, 3 or 6, **characterised** in that the first direction of motion is offered via a rotational motion at an angle, whereby the two displacement motions can occur each via one of two axes of rotation arranged parallel to each other.

30. 15. The valve arrangement according to claim 1 or 6, **characterised** in that the valve gate is arranged to be displaceable forwards and backwards in a box-shaped first casing section.

16. The valve arrangement according to claim 6 or 15, **characterised** in that the rotational motion interacts with a nut, but interacting in a somewhat flexible manner with the valve gate.

5 17. The valve arrangement according to claim 1 or 6, **characterised** in that a chosen ratio between the open surface area for one opening in the valve seating and the opening in the valve gate and an open surface area for the second opening in the valve seating and the opening in the valve gate is adapted to offer a chosen mixing ratio.

10 18. The valve arrangement according to claim 1 or 6, **characterised** in that the sum of the open surface area for the one opening in the valve seating and the opening in the valve gate and an open surface area for the second opening in the valve seating and the opening in the valve gate is adapted in order to offer a chosen rate of flow.
